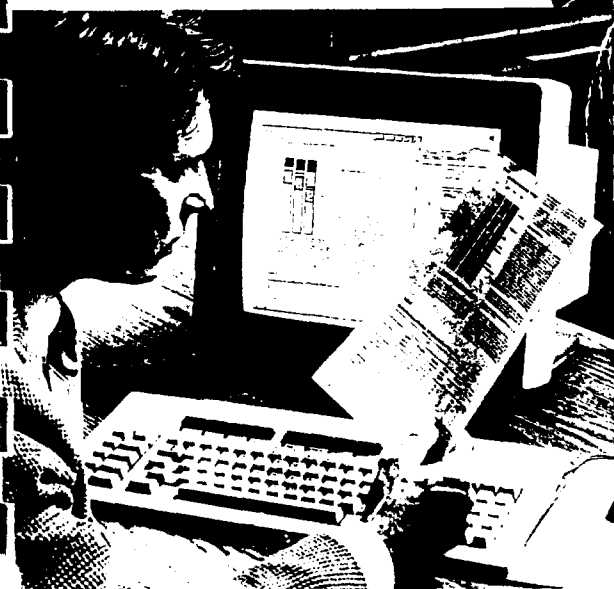


An Almanac of Industry,
Technology and Services

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U.S. Industrial Outlook 1994



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U.S. DEPARTMENT OF COMMERCE / International Trade Administration

**Forecasts for Selected Manufacturing
and Service Industries**

U.S. Industrial Outlook 1994

U.S. DEPARTMENT OF COMMERCE
Ronald H. Brown, Secretary

Jeffrey E. Garten
Under Secretary for International Trade



January 1994

Information Services

U.S. information services will continue to be among the fastest growing sectors of the economy as government and industry depend on them for increasing productivity and efficiency, and in developing innovative solutions to problems. Total revenues for the information services covered in this chapter are expected to climb more than 12 percent in 1994 to \$135.9 billion. Electronic information services will grow 15 percent to \$15.6 billion, data processing and network services more than 15 percent to \$53.6 billion, and computer professional services (consulting and training, systems integration, and custom programming) more than 9 percent to \$66.6 billion. All figures are presented in current dollars, i.e. unadjusted for inflation.

Information services companies generate, process, and distribute data. They also assist other organizations in developing systems, software, and plans to perform such functions. These services may be performed remotely or on customer premises. The increasing use of information services has contributed significantly to productivity, efficiency, competitiveness, and employment in the United States. More than one million persons are employed at more than 25,000 information services establishments.

For the purposes of this chapter, information services include electronic information services (SIC 7375), data processing and network services (partially defined in SIC 7374 and 7376), and computer professional services (SIC 7371, 7373, 7379 and 8243).

Before continuing this chapter, please see "Getting the Most Out of *Outlook '94*" on page 1. It will answer questions you may have concerning data collection procedures, forecasting methodology, factors affecting trade data, the use of current and constant dollars, sources and references, and the Standard Industrial Classification system. For other topics related to the

subjects of this chapter, see chapters 24 (Printing and Publishing), 26 (Computer Equipment), 27 (Computer Software) and 29 (Telecommunications Services).

INTERNATIONAL COMPETITIVENESS

The U.S. information services industry has always had a positive balance of payments. This is expected to continue, together with absolute increases in the size of the surplus. The industry's efforts should receive added impetus from the National Information Infrastructure project, also known as the Federal information superhighway (See Chapter 29, Telecommunications Services). The project's goal is to connect U.S. homes, businesses, government agencies, universities, and medical facilities to a broadband communications network capable of offering video, voice, and data. This project has important implications for the industry because it will encourage the use of information services, create new businesses, supply new and improved devices, and reduce the cost of information services. Other countries—including Canada, Japan, and members of the European Community—are planning or have begun to develop national networks similar to the one underway in the United States.

The U.S. Government places a high priority on removing barriers to cross-border trade and to investment. Information service companies are expected to benefit from implementation of two agreements: the North American Free Trade Agreement (NAFTA) and expansion of the General Agreement on Tariffs and Trade (GATT) to cover services trade. Provisions related to telecommunications and to intellectual property protection are particularly relevant to this industry.

By establishing working relationships with their counterparts overseas, U.S.-based trade associations contribute to the globalization of the information services industry. Especially active abroad are the Information Technology Association of America, the Information Industry Association, the Software Publishers Association, and the Electronic Data Interchange

Trends and Forecasts: Electronic Information Services, Data Processing, and Network Services (SIC 7374, 7375, 7376)

(in billions of dollars except as noted)

Item	1991	1992	1993 ¹	1994 ²	Percent Change 1991-1994		
					91-92	92-93	93-94
Electronic information services	10.2	11.7	13.6	15.6	14.7	16.0	14.7
Data processing and network services	35.6	40.7	46.4	53.6	14.3	14.0	15.5

¹Estimate.

²Forecast.

SOURCE: U.S. Department of Commerce, International Trade Administration (ITA).
Estimates and forecasts by ITA.

AT&T Unveils New Wireless System Linking Home Phones to Its Network

By John J. Keller, Staff Reporter of The Wall Street Journal

02/26/97

The Wall Street Journal

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AT&T Corp., declaring its readiness to deploy what it called the "communications medium for the 21st century," unveiled a wireless system designed and built by its own engineers that links residential and business telephones via radio waves to the AT&T network.

The project, to undergo an initial market test in Chicago with AT&T employees and regular customers over the next year, is the first step toward a rollout in numerous markets nationwide.

The system, which consists of a small transceiver mounted on the side of a house, could give AT&T a lightning-fast entry into the local phone business. It would save the company tremendous expense, as AT&T wouldn't have to run its own wires in local markets. The system would provide at least two phone lines and data transmission speed twice as fast as currently available over Bell lines.

"When we call this a breakthrough, we're placing it in the same category as satellite and fiber-optic transmission and electronic switching," said John R. Walter, AT&T's president, adding that the system is "more than simply a replacement for copper wires; we believe it's the channel that will finally bring the promise of the Communications Revolution into people's homes."

AT&T's plan drew some skepticism from analysts and potential rivals, who questioned the company's commitment to deploying the system. Others noted that phone companies in some parts of the world already are using less sophisticated wireless links in place of copper cable to link home phones in a public network. MCI Communications Corp., AT&T's long-distance rival, which has similar ambitions to enter the local phone business, noted that its agreement to resell wireless transmission from NextWave Communications includes applications to provide residential phone service.

"The question is, will this new system be meaningfully impactful in this century?" said Blake Bath, an analyst at Lehman Brothers Inc. "AT&T needs to deliver near-term revenue growth to build investor confidence again."

AT&T still plans to make deals with local phone companies to resell their phone lines and other facilities. But it also is betting that the new system can carry it into many new markets so it can lure local customers nimbly. "This is a very sharp arrow in AT&T's quiver," said

Wayne Perry, vice chairman of AT&T Wireless Services. "If Colorado Springs becomes a hot spot for competition, we can set up there quickly."

AT&T's system is actually a new invention the company said was necessitated when it failed to find what it needed technologically after a review of 58 suppliers' systems, including those of wireless leaders Lucent Technologies Inc., Motorola Inc., Sweden's LM Ericsson and Canada's Northern Telecom Ltd.

The AT&T system combines several arcane wireless-transmission schemes -- time division, frequency division and space division multiplexing -- into a new system that can split a frequency in numerous ways to ensure enormous capacity. AT&T claims the service will beat regular wired service in call quality and error-free data transmission.

For three years, AT&T kept its Project Angel -- to develop a system for bypassing the Bells and other local phone companies -- tightly wrapped. Housed in a nondescript facility in Redmond, Wash., the project had its own lab. AT&T hired 200 engineers and constructed a production line for manufacturing the 18-inch-square transceivers. It even kept its equipment spinoff, Lucent, in the dark about Angel, said Nick Kauser, chief technology director and the system's principal architect at AT&T Wireless.

From the beginning, AT&T aimed for a custom system. Whenever the system was discussed, Lucent's president, Richard McGinn, was asked to leave the meeting, said one person close to AT&T. Lucent officials declined to comment.

Added to AT&T's commitment was \$2.1 billion in new wireless licenses, which Mr. Perry bid on in the last two years. Today, those licenses cover 93% of the U.S. population, he said. "While everyone thought we were going to use these licenses for mobile-phone services, we were getting them for the fixed-wireless local-phone system as well as mobile services," he said. "Does that tell you AT&T is committed to building this?"

One Baby Bell, Ameritech Corp., believes so. It will see the first competition from AT&T's system, and yesterday said AT&T's plan validated its arguments for opening up all telecommunications markets immediately. "Customers are waiting. We should drop the barriers," said Richard Notebaert, chairman of Ameritech, which has been advocating competition since late 1993. "Let's get on with it."